IN THE CLAIMS

Please amend the claims to read as follows:

Listing of Claims

1. (Currently Amended) A radio receiving apparatus comprising:

a first ~~calculation section for calculating~~ calculator that calculates reception weighting factors W_k for ~~with respect to received~~ signals received respectively by ~~the respective~~ a plurality of n antenna ~~element~~ elements composing an adaptive array antenna;

an arrival direction ~~estimation section for estimating~~ estimator that calculates steering vectors S_k to estimate directions of arrival of ~~said~~ the received signals;

a second ~~calculation section for calculating~~ calculator that calculates weighting factors W_{rk} for ~~a~~ use in replica signal generation ~~in accordance with said~~ from the reception weighting factors W_k and ~~said directions of arrival~~ the steering vectors S_k;

a replica signal generator ~~for generating replica signals of each of said received signals using said weighting factors for a replica signal generation~~ that generates replica signals for the received signals using the weighting factors W_k; and

an eliminator ~~for eliminating said~~ that eliminates components equivalent to the replica signals from ~~said~~ the received signals, wherein

the second calculator calculates the weighting factors W_{rk} from the equation: $W_{rk} = \frac{S_k}{\sum_{k=1}^{n} S_k W_k}$.

2. (Currently Amended) The radio receiving apparatus according to claim 1, wherein said first ~~calculation section~~ calculator calculates the reception weighting factors W_{rk}, by which a radiation pattern is formed, in such a way that a null point is directed to a direction where an interference signal source exists.

3. (Currently Amended) The radio receiving apparatus according to claim 1, further comprising:

a plurality of processors ~~each having said first calculation section, said arrival direction estimation section, and said eliminator, as a multistage~~ that each comprise a first

calculator, an arrival direction estimator and an eliminator, as defined in claim 1, wherein

each processor is one stage of a multistage device.

4. (Currently Amended) The radio receiving apparatus according to claim 3, wherein in the processor of a latter stage, ~~said~~ the corresponding first ~~calculation section~~ calculator calculates the reception weighting factors ~~with respect to the~~ for signals obtained by eliminating equivalent components to the replica signals ~~from the received signals by said eliminator~~ generated in a preceding stage from signals received by the preceding stage~~, whereby updating the reception weighting factors sequentially~~.

5. (Currently Amended) The radio receiving apparatus according to claim 3, wherein in the processor of a latter stage, ~~said~~ the corresponding arrival direction ~~estimation section~~ estimator estimates the directions of arrival of ~~the~~ signals obtained by eliminating equivalent components to the replica signals ~~from the received signals by said eliminator~~ generated in a preceding stage from signals received by the preceding stage.

6. (Currently Amended) The radio receiving apparatus according to claim 5, wherein in the processor of a latter stage, ~~said~~ the corresponding arrival direction ~~estimation section~~ estimator estimates the directions of arrival of signals using an average value of calculated steering vectors in a given interval.

7. (Currently Amended) A mobile station apparatus ~~having a~~ comprising the radio receiving apparatus of claim 1 ~~thereon, said radio receiving apparatus comprising:~~

~~a first calculation section for calculating reception weighting factors with respect to received signals received by the respective antenna element composing an adaptive array antenna;~~

~~an arrival direction estimation section for estimating directions of arrival of said received signals;~~

~~a second calculation section for calculating weighting factors for a replica signal generation in accordance with said reception weighting factors and said directions of arrival;~~

~~a replica signal generator for generating replica signals of each of said received signals using said weighting factors for a replica signal generation; and~~

~~an eliminator for eliminating said replica signals from said received signals.~~

8. (Currently Amended) A base station apparatus ~~having a~~ comprising the radio receiving apparatus of claim 1 ~~thereon, said radio receiving apparatus comprising:~~

~~a first calculation section for calculating reception weighting factors with respect to received signals received by the respective antenna element composing an adaptive array antenna;~~

~~an arrival direction estimation section for estimating directions of arrival of said received signals;~~

~~a second calculation section for calculating weighting factors for a replica signal generation in accordance with said reception weighting factors and said directions of arrival;~~

~~a replica signal generator for generating replica signals of each of said received signals using said weighting factors for a replica signal generation; and an eliminator for eliminating said replica signals from said received signals.~~

9. (Cancelled).

10. (New) A radio receiving method comprising:

calculating reception weighting factors W_k for signals received respectively by a plurality of n antenna elements composing an adaptive array antenna;

calculating steering vectors S_k to estimate directions of arrival of the received signals;

calculating weighting factors W_{rk} for use in replica signal generation from the reception weighting factors W_k and the steering vectors S_k;

generating replica signals for the received signals using the weighting factors W_k; and

eliminating equivalent components to the replica signals from the received signals, wherein

the weighting factors W_{rk} are calculated from the equation:

$$W_{rk} = \frac{S_k}{\sum_{k=1}^{n} S_k W_k} .$$